REMARKS

Claims 1-20 are currently pending in the application. Claims 1-7 and 11-13 have been amended. Claims 16-20 are newly added. The Applicants sincerely thank the Examiner for indicating that claims 6, 9, 13 and 15 recite allowable subject matter.

A. Claims 1 and 4 are objected to because of minor informalities. With this Amendment, claims 1 and 4 have been amended to address the Examiner's concerns and it is respectfully submitted that the objections be withdrawn and that these claims be allowed.

B. Claims 1-9 are rejected under 35 U.S.C. § 112, second paragraph, as being allegedly indefinite because of insufficient antecedent basis. Claim 1 has been amended to address this concern and the Applicants respectfully submit that this rejection be withdrawn and that independent claim 1 be allowed as well as the allowance of dependent claims 2-9.

C. Claims 10-11 are rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Hsing et al. (U.S. Patent No. 6,167,025). Applicants respectfully traverse the rejection.

Claim 10 is broadly directed to a switching system of a dual active structure where an actual active path judging method can include checking an active path formed in a direction of a matched last receiving board at a receiving side terminal. An active path can be checked in the reverse direction of a data transmission direction and an entire path can be searched by checking a switching path of the board connected to the active path.

Hsing et al. discloses a method and apparatus for restoring connections in an ATM network. Virtual connections that are affected by link or node failures are restored through

re-routing as opposed to establishing a completely new connection between a source and a destination device. In col. 12, lines 6-9, Hsing et al. states that "in the event of failure of switch 116 or failure of the link connecting switches 118 and 116, the alternative route via ATM 120 will be used in accordance with the present invention."

This portion of Hsing et al. simply states that in the event of failure, an alternate ATM route will be used. Furthermore, step 729 in Figure 7 of Hsing et al. Cited by the Office Action only checks for the condition "Is the current switch the destination switch?" Thus, there in no teaching or suggestion of at least a feature of "checking an active path formed in a direction of a matched last receiving board at a receiving side terminal and combinations thereof as recited in claim 10."

Hsing et al. also fails to disclose "checking an active path in the reverse direction of a data transmission direction." The Office Action alleges that this feature is depicted in step 731 of Figure 7 of Hsing et al. The Applicants respectfully submit that this portion of Hsing et al. has not been characterized accurately in relation to claimed features of the present invention. Step 731 of Hsing et al. recites "transmit re-route confirm message along the newly established path to the source switch." Again, there is no checking of an active path in the reverse direction of a data transmission direction.

For at least the reasons presented above, Applicants respectfully submit that the rejection be withdrawn and that claim 10 be allowed.

Claim 11 is broadly directed to a switching system of a dual active structure, a standby path test method that can include checking an active path formed in a direction of a matched last receiving board at a receiving side terminal, checking an active path in the reverse direction of a data transmission direction, and searching an entire active path by checking a switching path of the board connected to the active path. A reverse path of the active path can be set as a reverse path and a path test can be performed with respect to the set standby path.

As discussed previously, steps 729, 730 and 731 of Figure 7 fail to disclose features of the claimed invention relating to checking an active path in the reverse direction of a data transmission direction and searching an entire active path by checking a switching path of the board connected to the active path.

Furthermore, in Hsing et al., col. 12, lines 6-9 states that "in the event of failure of switch 116 or failure of the link connecting switches 118 and 116, the alternative route via ATM 120 will be used in accordance with the present invention." Again, this simply states that an alternate route via ATM will be used. Applicants respectfully submit that there is no disclosure in Hsing et al. of setting a reverse path of the active path as a standby path. Likewise, there is no performance of a path test with respect to the set standby path.

For at least the reasons presented above , Applicants respectfully submit that the rejection be withdrawn and that claim 11 be allowed.

D. Claims 1-2 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Sakauchi (U.S. Patent No. 5,239,537) in view of Lee (U.S. Patent No. 5,907,670). Applicants respectfully traverse the rejection.

Claim 1 is broadly directed to a switching system which includes a plurality of devices formed in a dual active structure, a device controller for controlling the devices, and a main processor. A path management and testing method for the switching system can include a device controller which checks a valid path and state change for each board and forming a database using the main processor. The database is searched to confirm a standby path and a path test is performed for the entire interval or a certain interval with respect to the active or standby path.

Sakauchi discloses a packet switched network having alternate virtual paths. A virtual path memory stores data indicating link-to-link connections associated with normal virtual paths and link-to-link connections associated with alternate virtual paths. A fault detector is coupled to the communication link to detect a link failure. If a link failure occurs, a fault message is transmitted to adjacent switching nodes through service links, and data

corresponding to the faulty link is retrieved from the memory in response to a fault message that is received from the fault detector of from an adjacent node.

More particularly, in the specific portion of Sakauchi referred to in the Office Action (col. 2, lines 30-39) recites:

> A fault detector 14 is connected to transmission links 18 to constantly monitor their operating performance and informs a decision unit 13 of the occurrence of a link fault, if there is one. The faulty condition of a link is communicated by way of a fault message transceiver 15 to adjacent nodes by way of service lines 19. A fault message may be transmitted from a remote switching node, and relayed by
>
> an adjacent switching node to the fault message transceiver 15. On receiving it, the transceiver 15 informs decision unit 13 of this fact.

Thus, Sakauchi fails to disclose at least a feature of using a device controller to check a valid path and state change for each board and for forming a database using the main processor and combinations thereof as recited in claim 1.

Additionally, the Office Action acknowledges that Sakauchi does not teach performing a path test for the entire interval or a certain interval with respect to the active or standby path. The Office Action then provides Lee as a secondary reference in an attempt to make up for the deficiencies of the primary reference Sakauchi. The Office Action references Figures 3A, 3B and 3C in Lee as disclosing this feature.

In Figure 3A of Lee, a periodic timer 300 is set to perform a status check. Each of the processors 200, 202, 204 etc. as shown in FIG. 2 waits after its periodic timer is for the status check at step 300. When a time-out of the periodic timer contained in the processor for the status check is ascertained at step 302, the corresponding processor searches the processor adjacent thereto in the processor path Table of Table <1> at step 304. Once the path of the adjacent processor in the processor path Table is checked, the corresponding processor sends a message requesting the status check sum of the path Table of the adjacent processor at step 306, and then sets a response waiting timer at step 308.

The Applicants respectfully submit that Sakauchi fails to disclose using a device controller to check a valid path and state changes for each board and that the secondary patent Lee does not cure the deficiencies of the primary reference. Lee discloses the use of a periodic timer to perform status checks and the use of a processor path table to select an adjacent processor path.

For at least these reasons it is respectfully requested that the rejection be withdrawn and that claim 1 be allowed.

Claim 2 is a dependent claim which depends from independent claim 1 and should be allowable for at least the reasons presented above regarding claim 1 as well as well as the additionally recited features.

E. Claims 3-4 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Sakauchi in view of Lee and further in view of Hsing. Applicants respectfully traverse the rejection.

Claims 3-4 are dependent claims which depend from independent claim 1 and should be allowable for at least the reasons presented above regarding claim 1 as well as well as their additionally recited features.

F. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being allegedly unpatentable over Sakauchi in view of Lee and further in view of Tabata (U.S. Patent No. 5,875,172). Applicants respectfully traverse the rejection.

Claims 5 and 7 are dependent claims which depend from independent claim 1 and should be allowable for at least the reasons presented above regarding claim 1 as well as well as their additionally recited features.

G. Claim 8 is rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Sakauchi in view of Lee and Tabata and further in view of Hsing et al. Applicants respectfully traverse the rejection.

Claim 8 is a dependent claim which depends from independent claim 1 and should be allowable for at least the reasons presented above regarding claim 1 as well as well as the additionally recited features.

H. Claims 12 and 14 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Hsing et al. and further in view of Tabata and Lee. Applicants respectfully traverse the rejection.

Claims 12 and 14 are dependent claims which depend from independent claim 11 and should be allowable for at least the reasons presented above regarding claim 11 as well as well as their additionally recited features.

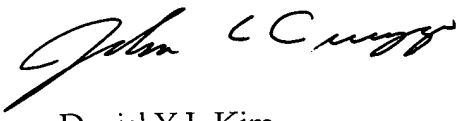
I. Further, it is respectfully submitted that newly added claims 16-20 are allowable for at least the same reasons presented above regarding the originally submitted claims and that no new matter has been added.

CONCLUSION

In view of the foregoing amendments and remarks, it is respectfully submitted that the application is in condition for allowance. If the Examiner believes that any additional changes would place the application in better condition for allowance, the Examiner is invited to contact the undersigned attorney, **JOHN L. CICCOZZI**, at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,
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